

CONTINUING (1.53(b)) UTILITY PATENT APPLICATION TRANSMITTAL

(Only for continuing applications under 37 CFR 1.53(b))

Attorney Docket No.

1317.1031D1/MDS

First Named Inventor:

Young-Nam OH

Title:

HYBRID DISC AND METHOD AND APPARATUS FOR
DISCRIMINATING SAME

Express Mail Label No.

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent
application contents.

ADDRESS TO:

**Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231**

1. ☒ Fee Transmittal Form
2. ☒ Specification, Claims & Abstract [Total Pages: 14]
3. ☒ Drawing(s) (35 USC 113) [Total Sheets: 3]
4. ☒ Oath or Declaration [Total Pages: 1]
 - a. ☐ Newly executed (original or copy)
 - b. ☒ Copy from a prior application (37 CFR 1.63(d)) (see Box 18)
5. ☐ This application is filed by fewer than all the inventors named in the prior nonprovisional application.
 - a. ☐ DELETE the following inventor(s) named in the prior nonprovisional application:
 - b. ☐ The inventor(s) to be deleted are set forth on a separate sheet attached hereto.
6. ☒ Incorporation by Reference (usable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
7. ☐ Microfiche Computer Program (Appendix)
8. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Copy
 - b. ☐ Paper Copy (identical to computer copy)
 - c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
11. ☐ English Translation Document (if applicable)
12. ☐ Foreign priority benefit under 35 U.S.C. §119 is claimed.
 - a. ☐ Certified Copy of Priority Document(s) filed in prior application No. / .
 - b. ☐ Certified Copy of Priority Document(s) enclosed.
 - c. ☐ Certified Copy of Priority Document(s) to follow.
13. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
14. ☒ Preliminary Amendment
 - a. ☒ enclosed herewith.
 - b. ☒ incorporated herein (see Box 18).
15. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
16. ☐ Small Entity Statement(s) ☐ Statement filed in prior application, status still proper and desired.
17. ☐ Other:

18. CONTINUING APPLICATION, check appropriate box and supply the requisite information below:

☐ Continuation ☒ Divisional ☐ Continuation-in-part (CIP) of prior application No: 09/ 055,711

Prior application information: Examiner: T. Kupstas

Group/Art Unit: 2754

* * *

Preliminary Amendment:

☒ Cancel in this application original claims 4-18, 20-22 of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

☐ Amend the specification by inserting before the first line the sentence:

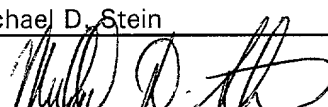
--This application is a divisional of application number 09/055,711, filed April 7, 1998, now pending.--

19. NEW CORRESPONDENCE ADDRESS * CUSTOMER NO. 21,171

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20. SIGNATURE OF ATTORNEY OR AGENT

NAME	Michael D. Stein	REGISTRATION NO.	37,240
SIGNATURE		DATE	4/24/00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Young-Nam OH

U.S. Serial No.: Unassigned

Examiner: Unassigned

Filed: April 24, 2000

Group Art Unit: 2754

For: HYBRID DISC AND METHOD AND APPARATUS FOR DISCRIMINATING
SAME

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Before examination of the above-identified application, please amend the application as follows:

IN THE CLAIMS

Please add claims 23 and 24, and cancel claims 4-18, and 20-22 without disclaimer or prejudice, as follows:

23. (NEW) The disc as claimed in claim 19, wherein one of said first and second recording surfaces is a CD (compact disc) recording surface.

24. (NEW) The disc as claimed in claim 19, wherein one of said first and second recording surfaces is a DVD (digital versatile disc) recording surface.

a user interface having a display and enabling a user to input a command;

a controller reading, upon installation of the disc in the disc playback apparatus, using said optical pickup, said data of the first recording density from the disc, reading a predetermined area where the data of the first recording density is recorded if the data of the

first recording density is readable, displaying on the display of the user interface a message requesting the user to select as the command one of a plurality of recording surfaces from which the data is to be read if identification information indicating that the disc has plural recording surfaces of different recording densities is read from the predetermined area, and reading the data of the first or second recording density according to the selection of the user input to the user interface; and

an RF (radio frequency) module proving the read data from the optical pickup to the controller.

REMARKS

Claims 1-3, 19, 23 and 24 pending, claims 23 and 24 have been newly added, and claims 4-18 and 20-22 have been canceled without disclaimer or prejudice. No new matter is presented in this Preliminary Amendment.

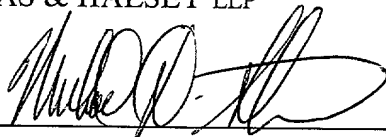
In view of the foregoing amendments and remarks, all claims are deemed to be allowable and this application is believed to be in condition for allowance.

If any further fees are required in connection with the filing of this Preliminary Amendment, please charge the same to our deposit account number 19-3935.

Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

Respectfully submitted,

STAAS & HALSEY LLP



Michael D. Stein

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TITLE OF THE INVENTION

HYBRID DISC AND METHOD AND APPARATUS FOR DISCRIMINATING SAME

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates to an optical disc playback apparatus, and more particularly, to an improved hybrid disc and a method and an apparatus for discriminating the same.

2. Description of the Related Art

10 A digital versatile disk (hereinafter, called "DVD" for short) playback apparatus can playback both a CD (compact disk) and a DVD. Thus, the DVD playback apparatus has a function of discriminating a type of the disc installed therein, to set a proper playback mode according to the disc type.

15 In discriminating the disc type, the DVD playback apparatus checks whether an installed disc is a DVD or a CD upon installation of the disc, and sets a proper playback mode according to the detected disc type. More specifically, upon installation of the disc, the DVD playback apparatus irradiates a laser beam for DVD/MMCD (Digital Versatile Disk/Multimedia CD) (hereinafter, referred to as a "DVD/MMCD laser beam" for short) having a wavelength of 650nm on the surface of the disc, to read data recorded thereon. At this moment, if the data recorded on the disc is readable, the DVD playback apparatus
20 recognizes the installed disc as a DVD and begins to read and playback the data recorded on the DVD. On the contrary, however, if the data recorded on the installed disc is unreadable, the DVD playback apparatus irradiates a laser beam for CD (hereinafter, referred to as a "CD laser beam" for short) having a wavelength of 780nm on the surface of the disc to read the data recorded on the installed disc. If the data recorded on the disc is readable, the DVD
25 playback apparatus recognizes the installed disc as a CD, and begins to read and playback the data recorded thereon.

 However, unlike a general CD (i.e., read-only CD), a recordable CD may be damaged undesirably, when exposed to the DVD/MMCD laser beam with a wavelength of

650nm. To prevent the recordable CD from being damaged by the DVD/MMCD laser beam, an improved DVD playback apparatus first checks whether the installed disc is a CD or not and thereafter, checks whether the installed disc is a DVD, if it is not the CD.

5 With an increasing demand for a multipurpose optical recording medium, a hybrid disc has been proposed which is compatible with both a CD playback apparatus and the DVD playback apparatus. Such a hybrid disc is applicable to a CD-ROM/DVD-ROM, a video-CD/DVD-video drive, a CD-DA (digital audio)/DVD-audio device, etc.

10 Referring to FIG. 1, the hybrid disc includes a poly-carbonate substrate having a diameter of 12cm and a thickness of 1.2mm. The hybrid disc includes a CD recording surface B positioned about $5\mu\text{m}$ below a label printed surface A, and a DVD/MMCD recording surface C positioned about 0.6mm below the label printed surface A. The CD recording surface B has a reflection factor of about 70%, and the DVD/MMCD recording surface C has a reflection factor of about 30%. As a combined CD and DVD recording medium, the hybrid disc is recognizable as a CD in the CD playback apparatus, and as a DVD in the DVD playback apparatus. CD data is recorded on the CD recording surface B, and DVD data is recorded on the DVD/MMCD recording surface C.

15 Therefore, the CD playback apparatus irradiates the CD laser beam on the hybrid disc, to read data recorded on the CD recording surface B, and the DVD playback apparatus irradiates the DVD/MMCD laser beam on the hybrid disc, to read data recorded on the DVD/MMCD recording surface C.

20 However, in the case that the DVD playback apparatus first checks whether the installed disc is a CD or not as mentioned above, to prevent the CD from being damaged in the course of discriminating the disc type, the DVD playback apparatus may mis-recognize the hybrid disc as a CD by reading the data recorded on the CD recording surface B of the hybrid disc.

25 SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide an improved hybrid disc and a method for accurately discriminating a hybrid disc, to thereby prevent a recordable CD from being damaged by a laser beam for a DVD/MMCD.

Additional objects and advantages of the invention will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the invention.

To achieve the above and other objects, a hybrid disc includes a substrate; a label printed surface formed on the substrate; a CD recording surface formed below the label printed surface, having identification information expressing a disc type recorded in a predetermined recording area; and a DVD recording surface formed below the CD recording surface.

Further, a method for discriminating the hybrid disc in a DVD playback apparatus includes the steps of irradiating a CD laser beam on an optical disk installed in the DVD playback apparatus; if data is readable from the optical disc, checking whether the identification information is recorded in the predetermined recording area; and recognizing the optical disc as the hybrid disc, if the identification information is recorded in the predetermined recording area.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and advantages of the present invention will become more apparent in the light of the following detailed description of an exemplary embodiment thereof taken with the attached drawings in which:

FIG. 1 illustrates a known hybrid disc;

FIG. 2 is a schematic block diagram of a DVD playback apparatus to which the present invention is applicable;

FIG. 3 is a flow chart for discriminating a hybrid disc according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the present invention will be described in detail referring to the attached drawings. Though the specific embodiment such as the detailed flow chart will be exemplarily defined and described in detail to clarify the subject matter of the present invention, the present invention may be implemented with the description of the present

invention by those skilled in the art even without the details. In addition, an unnecessary detailed description of widely known functions and constructions may be avoided here.

A hybrid disc according to a preferred embodiment of the present invention has identification information expressing a disc type, which are recorded on a particular recording area such as a file which is generally not used, a sector which is predetermined, or a TOC (table of contents) in a CD recording surface B of FIG. 1. The identification information is utilized when a DVD playback apparatus discriminates the disc type.

FIG. 2 shows a block diagram of a DVD playback apparatus to which the present invention is applicable. As illustrated in the drawing, an optical disc 10 is revolved by a spindle motor 12. An optical pickup 14 irradiates a CD laser beam with a wavelength of 780nm or a DVD/MMCD laser beam with a wavelength of 650nm on a surface of the revolving optical disc 10 under the control of a microprocessor 20, to read data recorded on the optical disc 10. The read data is amplified and reshaped at an RF (radio frequency) module 16. A servo 18 controls the spindle motor 12 and the optical pickup 14 according to servo information received from the RF module 16.

The data output from the RF module 16 is processed by an error correction and system parser 26, and decoded by an AV (audio-visual) decoder 24. Video data and audio data of the decoded data are converted into a video signal and an audio signal by a video processor 28 and an audio processor 30, respectively. A microprocessor 20 controls an overall operation of the DVD playback apparatus. A user interface 22 allows a use to input various control commands and displays various information thereon under the control of the microprocessor 20.

Now, a procedure for discriminating the disc according to the present invention will be described in detail with reference to FIGS. 2 and 3.

If the optical disc 10 is installed in the DVD playback apparatus of FIG. 2, the optical pickup 14 irradiates the CD laser beam with a wavelength of 780nm on the surface of the optical disc 10 under the control of the microprocessor 20, at a step 32. Here, if the optical disc 10 is a hybrid disc, the optical pickup 14 reads the data recorded on the CD recording surface B; otherwise, if the optical disc 10 is a CD (i.e., read-only CD) or a recordable CD,

the optical pickup 14 reads the data recorded on the CD or the recordable CD under the control of the microprocessor 20.

Then, the microprocessor 20 checks at a step 34 whether the data recorded on the installed optical disc 10 is readable or not. If the data is readable, the optical pickup 14 reads data recorded on a predetermined area of the installed optical disc 10 under the control of the microprocessor 20, at a step 36. It should be noted that the hybrid disc has the identification information recorded on the predetermined area, while the CD or recordable CD does not have the identification information recorded thereon.

At a step 38, the microprocessor 20 checks whether the data read from the predetermined area is the identification information expressing the hybrid disc. As a result, if the read data is the identification data, the microprocessor 20 recognizes the installed optical disc 10 as a hybrid disc, and goes to a step 40. However, if the read data is not the identification data, the microprocessor 20 recognizes the installed optical disc 10 as a CD or a recordable CD, and goes to a step 42.

Then, the user interface 22 displays thereon a message expressing that the installed optical disc 10 is a hybrid disc and the user should select one of a CD playback mode or a DVD playback mode, under the control of the microprocessor 20. In reply to the message, the user will select at a step 40 one of the two playback modes by way of the user interface 22. If the user selects the CD playback mode, the procedure goes to a step 42 to perform the CD playback mode. On the contrary, if the user selects the DVD playback mode, the procedure goes to a step 44 to perform the DVD playback mode.

If the data recorded on the installed optical disc 10 is unreadable at the step 34, the optical pickup 14 will irradiate the DVD/MMCD laser beam with a wavelength of 650nm on the installed optical disc 10 under the control of the microprocessor 20. Here, if the installed optical disc 10 is a DVD, the DVD playback apparatus can read the data. However, if the installed disc 10 is a different type of the disc such as MD (mini disc) and MOD (magneto optical disc), the DVD playback apparatus can not read the data.

The microprocessor 20 checks at a step 48 whether the data is readable or not. If the data is readable, the microprocessor 20 recognizes the installed optical disc 10 as a DVD and sets the DVD playback mode at a step 44. If the data is unreadable, it is considered that the

installed disc is neither a CD nor a DVD. Thus, the DVD playback apparatus performs a procedure for discriminating other disc types, at a step 50.

In summary, in the case that a recordable CD is installed, the DVD playback apparatus irradiates the CD laser beam with a wavelength of 780nm on the recordable CD. If the data is readable, the DVD playback apparatus reads the data recorded on the predetermined recording area. Since the recordable CD does not have the identification information on the predetermined recording area, the DVD playback apparatus recognizes the recordable CD as a general CD (i.e., read-only CD), and sets the CD playback mode. That is, the DVD playback apparatus does not irradiate the DVD/MMCD laser beam with a wavelength of 650nm on the surface of the recordable CD, so that the recordable CD may not be damaged.

Further, in the case that the hybrid disc is installed, the DVD playback apparatus irradiates the CD laser beam. If the data is readable, the DVD playback apparatus reads the identification information recorded on the predetermined recording area of the hybrid disc. As the result, the DVD playback apparatus recognizes the installed CD as a hybrid disc, and displays on the user interface 22 a message expressing that the user should select one of the CD playback mode and the DVD playback mode. Then, the DVD playback apparatus will be set to one of the CD playback mode and the DVD playback mode according to the user's selection. Of course, the DVD playback apparatus may automatically select one of the two operation modes.

Moreover, in the case that the DVD is installed, the DVD playback apparatus irradiates the CD laser beam on the DVD. In this case, since the data is unreadable, the DVD playback apparatus irradiates the DVD/MMCD laser beam on the DVD, to read the data recorded thereon.

As can be clearly understood from the foregoing descriptions, the DVD playback apparatus of the invention can accurately discriminate the hybrid disc and prevent the recordable CD from being damaged by the DVD/MMCD laser beam.

Although a preferred embodiment of the present invention has been described in detail hereinabove, it should be clearly understood that many variations and/or modifications of the

basic inventive concepts herein taught which may appear to those skilled in the art will still fall within the spirit and scope of the present invention as defined in the appended claims.

CLAIMS

What is claimed:

1 1. A hybrid disc comprising:
2 a substrate;
3 a label printed surface formed on said substrate;
4 a first recording surface having identification information expressing a disc type,
5 recorded in a predetermined recording area, said first recording surface being formed at a
6 first interval below said label printed surface; and
7 a second recording surface formed at a second interval below said label printed
8 surface;
9 wherein said second interval is longer than said first interval.

1 2. A hybrid disc according to claim 1, wherein said first recording surface is a
2 CD (compact disc) recording surface on which CD data is recorded, and said second
3 recording surface is a DVD (digital versatile disc) recording surface on which DVD data is
4 recorded.

1 3. A hybrid disc according to claim 2, wherein said predetermined recording area
2 is a file which is generally not used, a sector which is predetermined, or a TOC (table of
3 contents).

1 4. A method of discriminating a hybrid disc in a playback apparatus, the hybrid
2 disk having identification information expressing a disc type being and recorded in a
3 predetermined recording area, the method comprising the steps of:
4 irradiating a CD (compact disc) laser beam on an optical disc installed in the playback
5 apparatus;
6 if the CD laser beam reflected from the optical disc is readable data, checking
7 whether the identification information is recorded in the predetermined recording area; and

8 recognizing the optical disc as the hybrid disc, if the identification information is
9 recorded in the predetermined recording area.

1 5. A method of discriminating a hybrid disc according to claim 4, further
2 comprising the step of setting a CD playback mode, if the identification information is not
3 recorded in the predetermined recording area.

1 6. A method of discriminating a hybrid disc according to claim 4, further
2 comprising the steps of:

3 displaying a message requesting a selection of one of a CD playback mode and a
4 DVD playback mode, if the identification information is recorded in the predetermined
5 recording area; and

6 selectively setting one of the CD playback mode and the DVD playback mode
7 according to the selection of the playback modes.

1 7. A method of discriminating a hybrid disc according to claim 6, wherein said
2 predetermined recording area is a file which is generally not used, a sector which is
3 predetermined, or a TOC (table of contents).

1 8. A method of discriminating a hybrid disc according to claim 7, further
2 comprising the step of irradiating the CD laser beam on the optical disc to read a CD type of
3 reproduction data from the optical disc if the selected playback mode is the CD playback
4 mode, and irradiating a DVD laser beam on the optical disc to read a DVD type of
5 reproduction data if the selected playback mode is the DVD playback mode.

1 9. A method of discriminating a hybrid disc according to claim 4, further
2 comprising the steps of:

3 automatically selecting one of the CD playback mode and the DVD playback mode if
4 the identification information is recorded in the predetermined recording area; and
5 reproducing data from the optical disc according to the selected playback mode.

1 10. A method of discriminating a hybrid disc according to claim 4, further
2 comprising the steps of:
3 automatically selecting one of a CD playback mode and a DVD playback mode if the
4 identification information is recorded in the predetermined recording area; and
5 irradiating the CD laser beam on the optical disc to read a CD type of reproduction
6 data from the optical disc if the selected playback mode is the CD playback mode, and
7 irradiating a DVD laser beam on the optical disc to read a DVD type of reproduction data if
8 the selected playback mode is the DVD playback mode.

1 11. A method of discriminating a type of an optical disc installed in a playback
2 apparatus, comprising the steps of:
3 (a) irradiating a CD (compact disc) laser beam on the optical disc;
4 (b) determining whether the CD laser beam reflected from the optical disc is readable
5 data;
6 (c) checking whether identification information is recorded in a predetermined
7 recording area of the optical disc if the reflected CD laser beam is readable data; and
8 (d) determining the optical disc to be a hybrid disc containing data of at least two
9 different formats if the identification information is recorded in the predetermined recording
10 area.

1 12. The method according to claim 11, further comprising the step of (e)
2 determining the optical disc to be a CD if the reflected CD laser beam is readable data in
3 said step (b) and the identification information is not recorded in the predetermined recording
4 area in said step (c).

1 13. The method according to claim 11, further comprising the steps of:
2 (e) irradiating a DVD (digital versatile disc) laser beam on the optical disc if the
3 reflected CD laser beam is not readable data in said step (b);
4 (f) determining whether the DVD laser beam reflected from the optical disc is
5 readable data; and

6 (g) determining the optical disc to be a DVD if the reflected DVD laser beam is
7 readable data in said step (f).

1 14. The method according to claim 12, further comprising the steps of:

2 (f) irradiating a DVD (digital versatile disc) laser beam on the optical disc if the
3 reflected CD laser beam is not readable data in said step (b);

4 (g) determining whether the DVD laser beam reflected from the optical disc is
5 readable data; and

6 (h) determining the optical disc to be a DVD if the reflected DVD laser beam is
7 readable data in said step (g).

1 15. The method according to claim 13, further comprising the step of:

2 (h) discriminating the optical disc to be a type other than the CD and the DVD if the
3 reflected DVD laser beam is not readable data in said step (f).

1 16. The method according to claim 14, further comprising the step of:

2 (i) discriminating the optical disc to be a type other than the CD and the DVD if the
3 reflected DVD laser beam is not readable data in said step (g).

1 17. The method according to claim 11, further comprising the steps of:

2 (e) awaiting an input from a user requesting selection of one of a CD playback mode
3 and a DVD playback mode if the optical disc is determined to be the hybrid disc in said step
4 (d); and

5 (f) reproducing data from the hybrid disc according to the selected one of the CD
6 playback mode and the DVD playback mode.

1 18. The method according to claim 16, further comprising the steps of:

2 (j) awaiting an input from a user requesting selection of one of a CD playback mode
3 and a DVD playback mode if the optical disc is determined to be the hybrid disc in said step
4 (d); and

5 (k) reproducing data from the hybrid disc according to the selected one of the CD
6 playback mode and the DVD playback mode.

1 19. A hybrid disc comprising:
2 a substrate;
3 a first recording surface formed at a first level in said substrate, said first recording
4 surface including a first format type of reproduction data and a predetermined recording area
5 having identification information indicating that the hybrid disc is a hybrid disc type; and
6 a second recording surface formed at a second level in said substrate, said second
7 recording surface including a second format type of reproduction data different from said
8 first type of reproduction data.

1 20. A playback apparatus to distinguish a type of an optical disc from which data
2 is to be reproduced, comprising:
3 an optical unit to irradiate a first format type laser beam on the optical disc; and
4 a processor to read the first format type laser beam reflected from the optical disc, to
5 check whether the optical disc has identification information recorded in a predetermined
6 recording area of the optical disc indicating that the optical disc is a hybrid disc if the
7 reflected first format type laser beam is readable, and to determine that the optical disc is the
8 hybrid disc if the optical disc has the identification information in the predetermined
9 recording area.

1 21. The playback apparatus as claimed in claim 20, wherein the processor
2 determines the optical disc to be a first type format optical disc if the reflected first format
3 type laser beam is readable, causes said optical unit to irradiate a second format type laser
4 beam on the optical disc if the reflected first format type laser beam is not readable, and
5 determines the optical disc to be a second type format optical disc if the second type format
6 laser beam reflected from the optical disc is readable.

1 22. The playback apparatus as claimed in claim 21, wherein the first type format
2 is a compact disc (CD) format and the second type format is a digital versatile disc (DVD)
3 format.

ABSTRACT OF THE DISCLOSURE

A DVD playback apparatus accurately discriminates a hybrid disc, to prevent a recordable CD installed therein from being damaged by a laser beam for a DVD/MMCD.

The hybrid disc includes a label printed surface formed on a substrate, a CD recording surface formed below the label printed surface, having identification information expressing a disc type, and a DVD recording surface formed below the CD recording surface. The DVD playback apparatus irradiates a CD laser beam on an optical disc installed therein. If data is readable from the optical disc, it is checked whether the identification information is recorded in the predetermined recording area. The DVD playback apparatus recognizes the optical disc as the hybrid disc, if the identification information is recorded in the predetermined recording area.

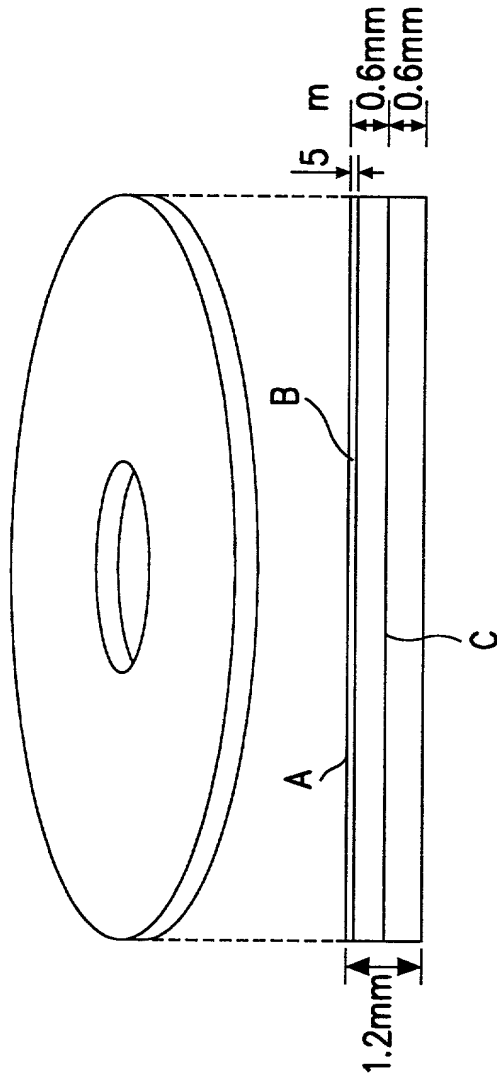


FIG. 1
PRIOR ART

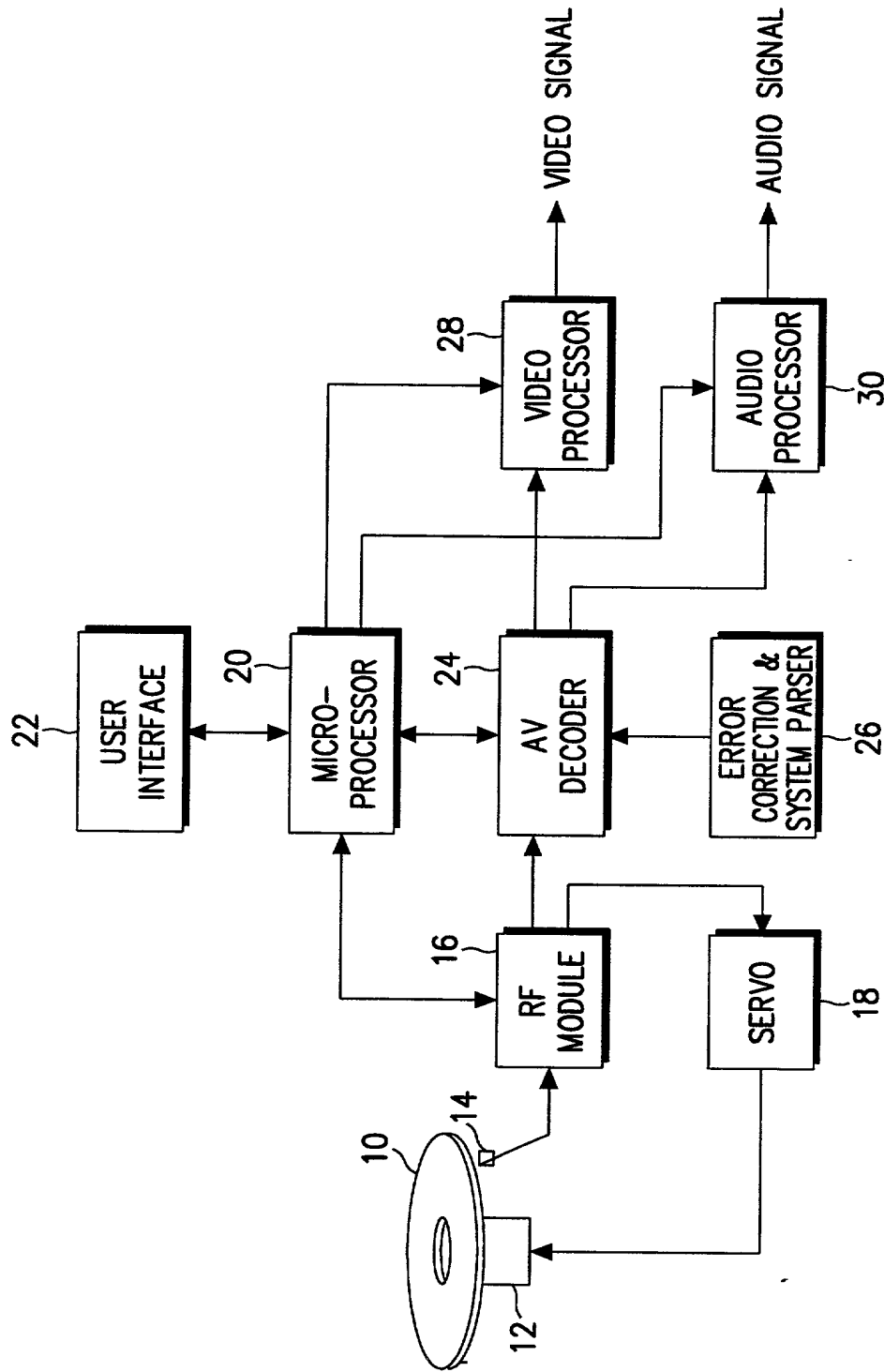


FIG. 2

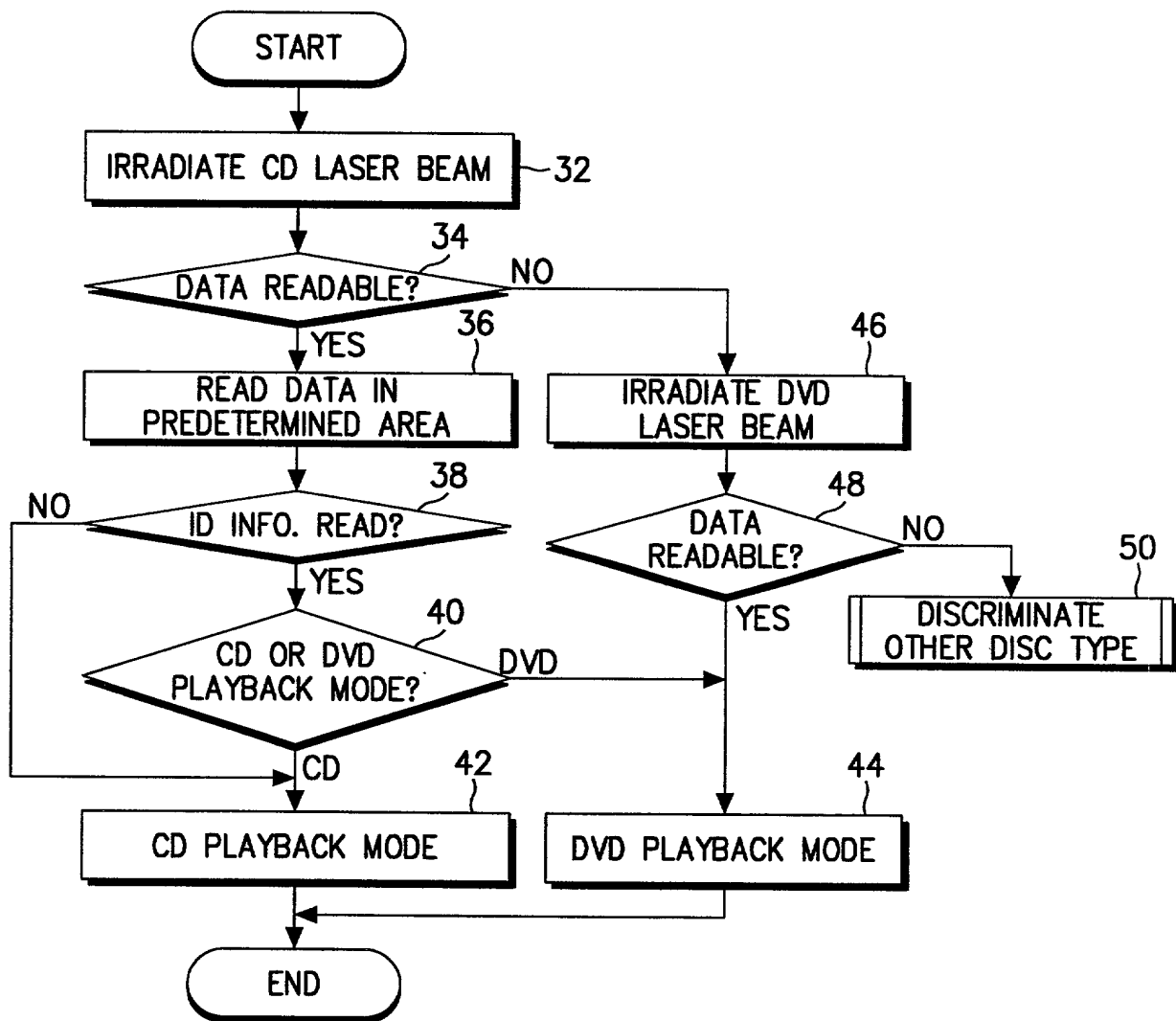


FIG. 3

S&H 10/97

UNITED STATES

Docket No.: _____

COMBINED DECLARATION/POWER OF ATTORNEY FOR UTILITY/DESIGN PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

HYBRID DISC AND METHOD AND APPARATUS FOR DISCRIMINATING SAME

the specification of which (check one) ☐ is attached hereto ☐ was filed on _____ as U.S. Application Serial No. _____ and was amended on _____, (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in §1.56. I hereby claim foreign priority benefit(s) under 35 U.S.C. §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Claimed

<u>1997-43774</u>	<u>Korea</u>	<u>30 August 1997</u>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(Number)	(Country)	Day/Month/Year Filled		
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(Number)	(Country)	Day/Month/Year Filled		

I hereby claim the benefit under 35 U.S.C. §120 of any U.S. application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

<u> </u>	<u> </u>	<u> </u>
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

<u> </u>	<u> </u>	<u> </u>
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

POWER OF ATTORNEY:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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